



electric tibial nerve stimulation  
to reduce incontinence in care homes

# ELECTRIC:

ELECTric: Tibial nerve stimulation to Reduce  
Incontinence in Care homes

## Training Handbook

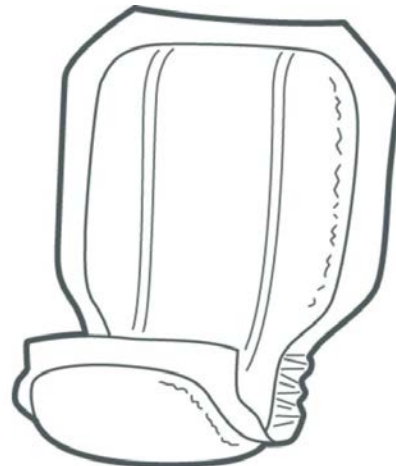
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## Background - Urinary Incontinence in Care Homes

Urinary incontinence:

- Is a distressing and embarrassing condition that occurs in around 75% of older people who live in Care Homes
- Is common in those who have dementia as well as those with other medical conditions
- Has a major impact on an older person's dignity and quality of life
- Is linked to other health problems and relationship difficulties
- Affects a person's ability and willingness to socialise
- Has few treatment options available (except medication)



## Transcutaneous Posterior Tibial Nerve Stimulation (TPTNS)

- Transcutaneous Posterior Tibial Nerve Stimulation (TPTNS) is a non-invasive, safe, low-cost treatment with demonstrated effectiveness for reducing urinary incontinence in adults
- It involves placing two sticky pads (surface electrodes) on a person's ankle and connecting these to a small, pocket sized electrical stimulator called a NeuroTrac machine (Figures 1 and 2)
- The treatment is similar to a TENS machine which is sometimes used for treating pain



Figure 1: NeuroTrac machine and surface electrodes



Figure 2: The Neurotrac machine attached to the ankle

- The Neurotrac machine sends an electric pulse to the tibial nerve near the ankle (Figure 3) which also controls the bladder. It feels like a gentle pulsing and its strength is altered to suit the person and what is comfortable for them

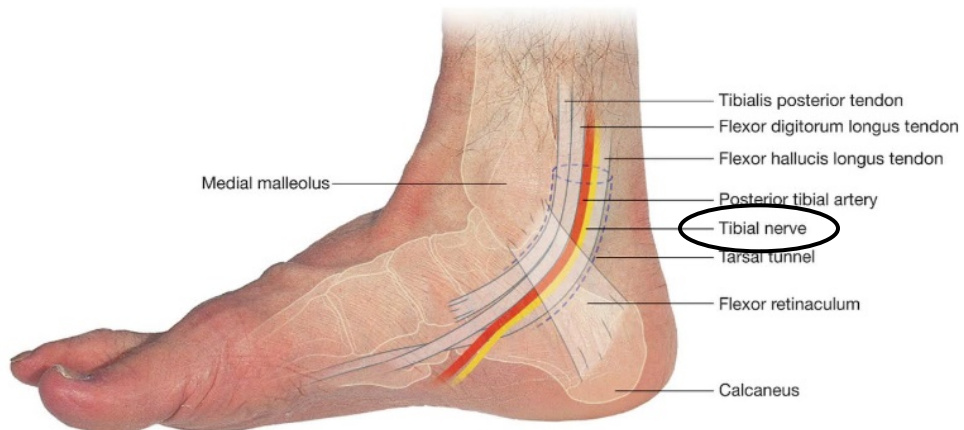


Figure 3: Location of the tibial nerve (in yellow)


## How does TPTNS work?

- Reduces feelings of urgency – resident has more time to get to toilet
- Reduces frequency – fewer trips to the toilet
- Increases bladder capacity – resident can hold more urine
- Overall = better bladder control




## Treatment with TPTNS


- Each session lasts half an hour
- Total of 12 sessions over a 6-week period (twice a week)
- Feels like gentle pulsing, pulse strength is altered to suit the resident and what is comfortable for them
- No safety concerns



for **6** weeks



**30** minutes  
**Half an hour**



**twice** a week

## TPTNS Procedure

### Setting up the Neurotrac machine

The Neurotrac may already be set up for TPTNS (see Figure 4), but if not please follow the instructions below:

- Turn on the Neurotrac using the circle button under the screen
- Select programme by pressing 'PRG' button several times until 'PC1' is selected – hold down 'SET' button until Hz flashes on top left of screen
- Use the down arrow to select 10Hz – press 'SET' button until uS flashes on top right of screen
- Use the down arrow to select 200 uS – press 'SET' button until time flashes
- Time is defaulted at 30 minutes so press 'SET' button
- WRK seconds flashes – select as high as can go (99 secs) by holding down or pressing the plus button – press SET
- RST seconds – select as low as can go (2 secs) by holding down or pressing the minus button – press SET
- RMU seconds - select as low as can go (0.1 secs) by holding down or pressing the minus button – press SET
- SYN – default so leave and press SET
- DLY - default so leave and press SET
- Set up is now finished so press the PRG/ESC button to exit

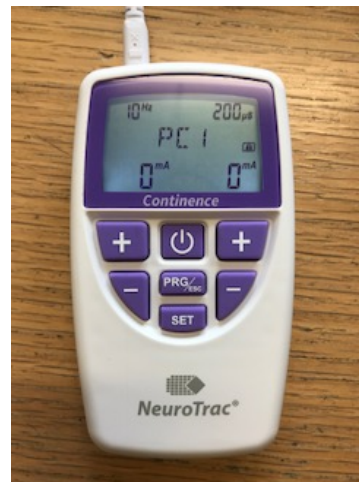


Figure 4: correct set up screen



## 'Locking' the Neurotrac Machine

- If you wish to record the stimulations to check they have been delivered correctly (fidelity checking), then the machine must be 'locked'
- Undo the back of the Neurotrac machine and insert the end of the lead connector into the small hole above the battery until you hear 2 beeps (Figure 5)

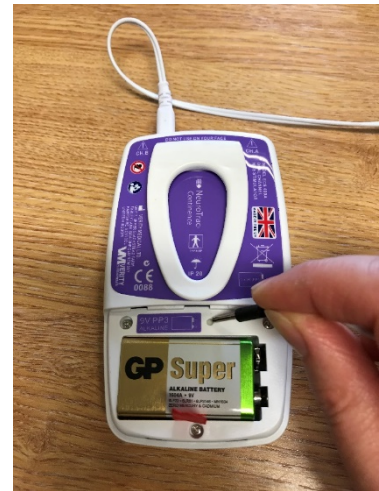


Figure 5: unlocking the Neurotrac

- Release the button and turn the machine round to check a small padlock sign has appeared on the front right side of the screen (Figure 6)
- Machine is now 'locked' and will record any stimulations given (see page 13 for information on how to check fidelity)

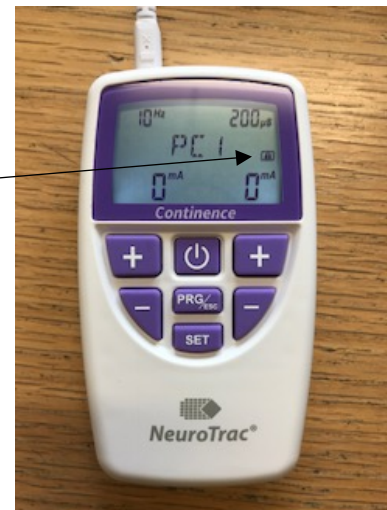


Figure 6: padlock sign on

## Applying the surface electrodes (sticky pads)

- Make sure the resident is sitting or lying comfortably
- Remove the plastic backing and stick one on the **inside** ankle of either leg, behind the ankle bone
- Remove the plastic backing from the other sticky pad and stick it two-to-three fingers width above the first pad, making sure they are not touching
- Connect the black lead to the bottom sticky pad (remember 'Black to Bottom'), push firmly
- Connect the red lead to the top sticky pad, the one nearest the knee, push firmly
- Please see Figures 7 and 8 below for examples of correct positioning



Figures 7 and 8: Correct positioning of the surface electrodes and Neurotrac leads

## Starting the stimulation (treatment)

- Turn the machine on
- Push the + button to increase the stimulation intensity
- When the big toe or other toes bend or start to twitch (hallux reaction) or resident finds uncomfortable, decrease level slightly until comfortable (with no hallux reaction)
- Use the + and – buttons as appropriate to make sure TPTNS is comfortable for the whole 30-minute session
- NB there will be a 2 second interval in the stimulation every now and then, this is normal and you can make the resident aware this might happen

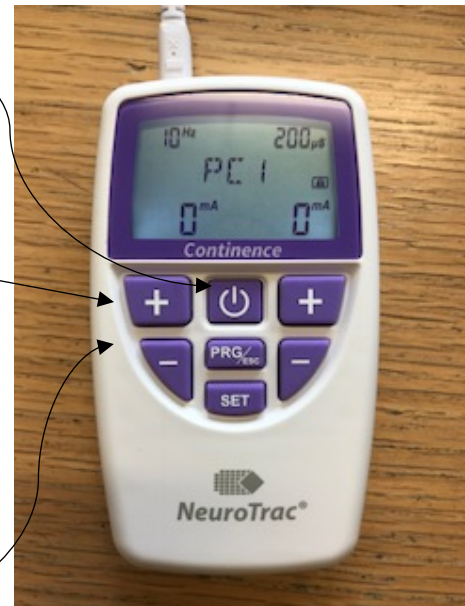


Figure 9: Operating the Neurotrac machine

## When the stimulation session has finished:

- The machine will automatically switch off after 30 minutes
- Disconnect both leads from the sticky pads, remove the sticky pads carefully (especially if the skin is fragile) and put them back onto the plastic backing to keep them moist
- Put the sticky pads back in their plastic bag and seal it
- Replace sticky pads every 3-4 weeks or when necessary

## TPTNS Stimulation Diary

To keep a record of the stimulations given please see Appendix 1 for an example of a stimulation diary

## TPTNS - Resolving Issues

### Treatment related Issues

<b>Issue</b>	<b>Resolution</b>
Resident can't feel stimulation	Try switching off and then re-positioning electrodes
Resident finds uncomfortable	Electrodes might be too near to each other (should be at least 2 fingers apart)
Red marks appear where the sticky pads have been	Resident might be sensitive or allergic to the pads, try hypoallergenic pads
No initial improvement	Continue for another 12 weeks

### Technical or Machine related Issues

<b>Issue</b>	<b>Resolution</b>
Electrodes don't stick	Skin might be greasy (use alcohol wipes before applying pads) or replace electrodes
Red marks appear where the sticky pads have been	Resident might be sensitive or allergic to the pads, try hypoallergenic pads
Neurotrac machine cuts out	Try changing battery or electrodes
Neurotrac not working properly	Check the machine is 'locked', look for the padlock sign (see page 9)

## Recording and checking fidelity of the stimulations

- Switch the Neurotrac machine on and check the padlock icon is displayed on the screen (if the machine has not been locked then it will not have recorded any stimulations – please see page 9 for information on how to lock the machine)
- Undo the back of the Neurotrac machine and insert the end of the lead connector into the small hole above the battery (shown in Figure 10)

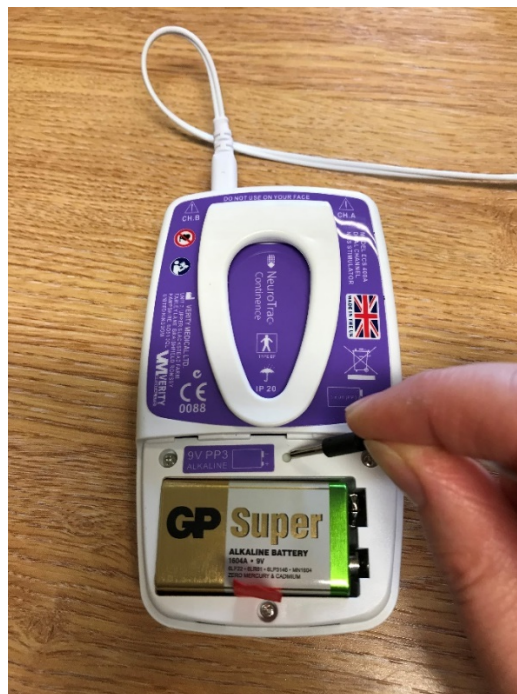


Figure 10: unlocking the Neurotrac to check fidelity

- You will hear a single 'bleep'. DO NOT SWITCH THE MACHINE OFF
- The total stimulation time and average stimulation intensity will be displayed on the digital display at the front of the machine – on the side where the lead is plugged in (Figure 11) - Ignore any figure on the opposite side with no lead plugged in

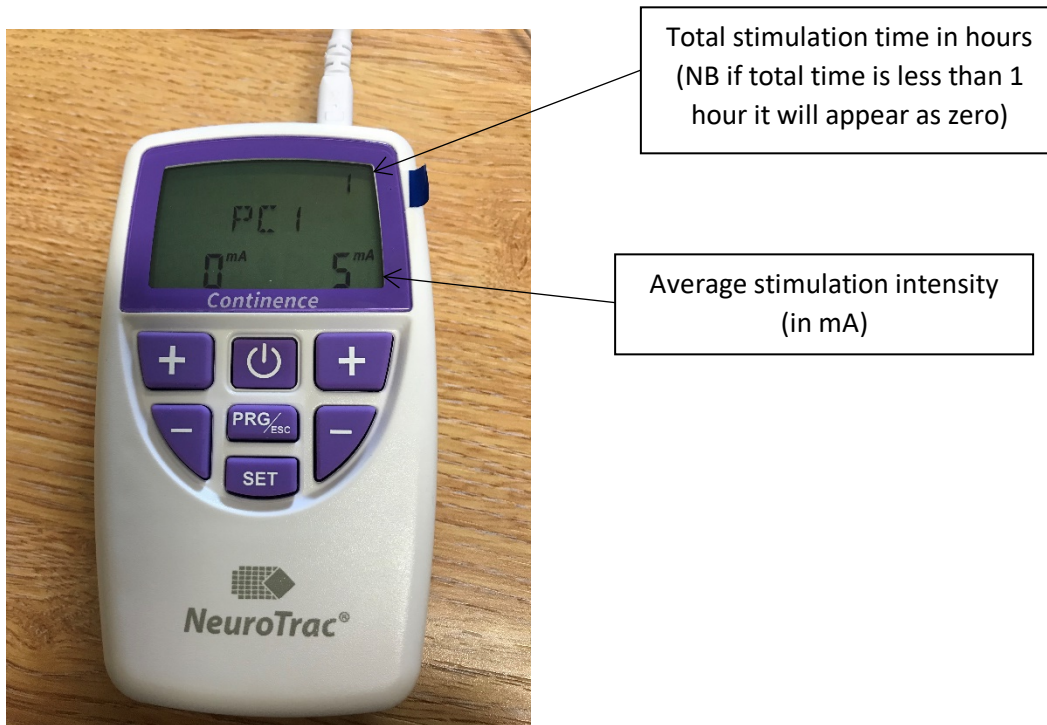


Figure 11: fidelity checking screen

- If required, write these figures down as quickly as possible as the figures will disappear from the screen after a short period of time
- Switch the machine off and then turn it on again to reset. The figures will have gone and cannot now be retrieved
- Re-lock the machine before returning to the resident. Insert the lead connector into the hole on the back of the machine again (Figure 10) – you will hear two short ‘bleeps’. Check the small padlock is displayed on the digital screen to confirm the machine is locked

## Further Information

ELECTRIC Trial website:

<https://w3.abdn.ac.uk/hsru/ELECTRIC/Public/Public/index.cshtml>

## Appendices

Appendix 1: TPTNS Stimulation Diary

Appendix 2: Brief instructions for delivering TPTNS



## ELECTRIC Trial: Stimulation Diary

Session	Date	Time	Intensity of Stim.	Comments e.g. any adverse reaction, or initial refusal of treatment	Initials (staff)
1					
2					
3					
4					
5					
6					
7					
8					



<b>Session</b>	<b>Date</b>	<b>Start Time</b>	<b>Intensity of Stim.</b>	<b>Comments</b> e.g. any adverse reaction, or initial refusal of treatment, participating in any other activities while having TPTNS e.g. eating, TV.	<b>Initials</b> (staff)
9					
10					
11					
12					

# ELECTRIC Trial - TPTNS



## Treatment Instructions

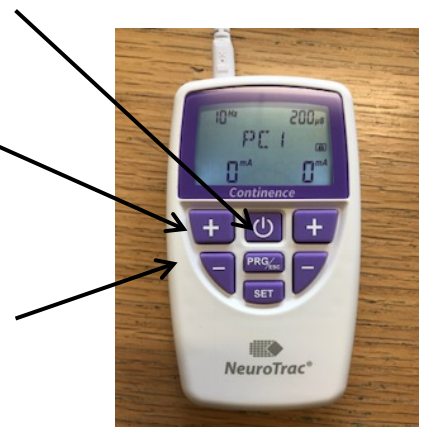


### Applying the sticky pads (called surface electrodes)

1. Remove the plastic backing and stick one on the inside ankle of either leg behind the ankle bone. This will be just above the heel on the inside of the ankle.
2. Remove the plastic backing from the other sticky pad and stick it approximately two fingers width above the first pad, making sure they are not touching.
3. Connect the black lead to the bottom sticky pad (**Black to Bottom**), push firmly.
4. Connect the **red** lead to the top sticky pad, the one nearest the knee, push firmly.

### Starting the stimulation

5. Turn the machine on
6. Check the **padlock sign** is showing – if it is not, lock the machine before beginning the stimulation
7. Push the + button to increase the stimulation intensity
8. When the big toe or other toes bend or start to twitch, decrease level slightly until comfortable (but no twitching/bending)
9. Use the + and – buttons as appropriate to make sure it is comfortable during the 30 minute session



### When the stimulation session has finished

10. The machine will automatically switch off after 30 minutes.
11. Disconnect the red and black leads, remove the sticky pads and put the plastic backing on to keep them moist.